

CLAIMS

1. A process of producing man-made vitreous fibres having a phosphorus content of at least 0.5%, measured as weight  
5 %  $P_2O_5$ , comprising  
    providing a charge of mineral material which includes briquettes,  
    melting the charge in a furnace to provide a melt and  
    fiberising the melt to form fibres,  
10 wherein the briquettes comprise a non-virgin rock material comprising at least 2% phosphorus, the non-virgin rock material being selected from the group consisting of sewage sludge ash, bone meal ash, granulated sewage sludge slag and mixtures thereof.
- 15 2. A process according to claim 1 in which the non-virgin rock material comprises at least 3% phosphorus.
3. A process according to claim 2 in which the non-virgin rock material comprises at least 5% phosphorus.
4. A process according to any preceding claim in which  
20 the non-virgin rock material comprises sewage sludge ash.
5. A process according to any preceding claim in which the non-virgin rock material comprises granulated sewage sludge slag.
6. A process according to any preceding claim in which  
25 the briquettes comprise at least 3% by weight, preferably at least 4% by weight, more preferably at least 5% by weight non-virgin rock material.
7. A process according to any preceding claim in which the briquettes comprise not more than 25%, preferably not  
30 more than 15%, more preferably not more than 10%, by weight non-virgin rock material.
8. A process according to claim 1 in which the non-virgin rock material is granulated sewage sludge slag and the briquettes comprise not more than 50 wt.% granulated sewage  
35 sludge slag.
9. A process according to claim 1 in which the non-virgin rock material is sewage sludge ash and the charge of mineral material contains from 1 to 25%, preferably from 4 to 15% sewage sludge ash, by weight of charge.

10. A process according to any preceding claim in which the briquettes additionally comprise waste mineral wool.
11. A process according to any preceding claim in which the briquettes are produced at least two days prior to their inclusion in the charge.
12. A process according to any preceding claim in which the fibres comprise less than 22% aluminium, preferably less than 17%, most preferably between 10 and 15% aluminium, measured as weight %  $\text{Al}_2\text{O}_3$ .
13. A process according to any preceding claim in which the fibres comprise from 0.5 to 10% phosphorus, preferably less than 5% phosphorus, measured as weight %  $\text{P}_2\text{O}_5$ .
14. A process according to claim 14 in which the fibres comprise at least 1%, preferably at least 2%, phosphorus.
15. 15. A process according to any preceding claim in which at least 90%, preferably at least 92%, more preferably at least 95%, of the phosphorus in the charge is transferred into the melt and the fibres.
16. A process according to any preceding claim in which the furnace is a shaft furnace, preferably a cupola furnace.
17. A process according to claim 16 in which iron is tapped from the furnace and is preferably reused in an iron foundry.
18. A process according to any preceding claim in which the fibres comprise less than 4% aluminium, measured as weight percent  $\text{Al}_2\text{O}_3$ .
19. A process of producing man-made vitreous fibres comprising providing a charge of mineral material which includes briquettes, melting the charge in a furnace to provide a melt and fiberising the melt to form fibres, wherein the briquettes comprise sewage sludge ash.
20. A process of producing man-made vitreous fibres comprising providing a charge of mineral material which includes powder form material selected from the group consisting of sewage sludge ash, bone meal ash, granulated sewage sludge slag and mixtures thereof, melting the charge in a furnace to provide a melt and fiberising the melt to form fibres.

21. A process according to claim 20 in which the powder form material is selected from sewage sludge ash, bone meal ash and mixtures thereof.

22. A process according to claim 20 comprising forming the  
5 fibres into a product which is an insulation product, a growth substrate or a granulated filler.

23. A process according to claim 21 in which the product is used for sound insulation or fire protection.